

CLAIMS

1. A blood purifying apparatus comprising a dialysate feed means, a replacement fluid feed means, a drain means, a blood purifying device, and a blood circulation path consisting of a blood drawing line and a blood retransfusing line, wherein:

said dialysate feed means comprises: a dialysate transfer line of which one end is connected to said blood purifying device and the other end connected to a dialysate reservoir unit; a dialysate transfer pump disposed in said line; a dialysate reservoir container connected to a dialysate branch line branching off on an inlet side of said dialysate transfer pump; and a shutoff valve attached to said dialysate transfer line upstream of a branch portion;

said replacement fluid feed means comprises: a replacement fluid feed line of which one end is connected to said blood retransfusing line and the other end connected to a replacement fluid reservoir unit; a replacement fluid transfer pump disposed in said line; a replacement fluid reservoir container connected to a replacement fluid branch line branching off on an inlet side of said replacement fluid transfer pump; and a shutoff valve attached to said replacement fluid line upstream of a branch portion;

said drain means comprises: a drain line of which one end is connected to said blood purifying device and the other end opened; a drain transfer pump disposed in said line; a drain reservoir container connected to a drain branch line branching off on an outlet side of said drain transfer pump; and a shutoff valve attached to said drain line downstream of a branch portion,

wherein the three reservoir containers are each equipped with a fluid level sensor, said device further comprising a weightmeter for weighing the said three reservoir containers all at the same time, and a control unit for controlling the opening and closing of said shutoff valves and the pump flow

rate of each of said transfer pumps.

2. The blood purifying apparatus according to claim 1, wherein the individual fluid level sensors detect an upper limit of a fluid in each of said reservoir containers.

3. The blood purifying apparatus according to claim 1, wherein the fluid level sensor for said drain reservoir container detects a lower limit of a fluid in said drain reservoir container, and the fluid level sensors for said dialysate reservoir container and the replacement fluid reservoir container detect an upper limit of fluids in said dialysate reservoir container and the replacement fluid reservoir container.

4. The blood purifying apparatus according to any one of claims 1 to 3, wherein said apparatus is of a continuous and slow type.

5. A method of controlling the blood purifying apparatus according to any one of claims 1 to 4, said method comprising performing a removed body fluid weight measuring phase consisting of:

a first phase in which said shutoff valves are opened, whereby said dialysate reservoir container and said replacement fluid reservoir container are each filled with a fluid while at the same time a fluid is discharged from said drain reservoir container; and

a second phase in which said apparatus is controlled with each of said shutoff valves closed, and a change in the total fluid weight in said dialysate reservoir container, said replacement fluid reservoir container, and said drain reservoir container during the operation of said apparatus is acquired from information provided by said weightmeter in order to weigh the removal weight of body fluid,

wherein said control unit controls the flow rate of at least one transfer pump such that a desired removal weight of body fluid can be obtained in said second phase.

6. A method of controlling the blood purifying apparatus according to any one of claims 1 to 4, said method comprising performing a feed weight measuring phase consisting of:

a third phase in which each of said shutoff valves are opened, whereby said dialysate reservoir container and said replacement fluid reservoir container are filled with individual fluids while at the same time a fluid is discharged from said drain reservoir container; and

a fourth phase in which said apparatus is controlled with only the shutoff valve for said dialysate feed means and the shutoff valve for said replacement fluid feed means closed, and in which a change in the total fluid weight in said dialysate reservoir container, said replacement fluid reservoir container, and said drain reservoir container is acquired from information provided by said weightmeter so as to calculate a feed weight which is the sum of the weight of replacement fluid and the weight of the dialysate,

wherein:

said control unit controls the flow rate of said dialysate transfer pump and said replacement fluid transfer pump such that a desired feed weight can be obtained during the fourth phase.

7. A method of controlling the blood purifying apparatus according to any one of claims 1 to 4, said method comprising an arbitrary combination of the control method based on said removed body fluid weight measuring phase according to claim 5 and the control method based on said feed weight measuring phase according to claim 6.

8. The blood purifying apparatus operation method according to claim 7, said method comprising alternately repeating the control method based on the removed body fluid weight measuring phase according to claim 5 and the control method based on the feed weight measuring phase according to claim 6.